



Oregon

Kate Brown, Governor

Department of Environmental Quality

Northwest Region

2020 SW 4th Ave, Suite 400

Portland, OR 97201

(503) 229-5263

FAX (503) 229-6945

TTY 711

December 21, 2015

Stuart Dearden
Sanofi-Aventis U.S.
55 Corporate Drive
Mail Code 55A-300A
Bridgewater, NJ 08807

Subject: Response to DEQ Comments on Outfall 22B IRAM Performance Monitoring Second Quarter 2015 Report
RP-Portland Site
ECSI #155

Dear Mr. Dearden:

The Oregon Department of Environmental Quality (DEQ) received the November 6, 2015 letter *RE: Response to October 8, 2015 Letter Outfall 22B IRAM Performance Monitoring Second Quarter 2015 Report Former Rhone-Poulenc-Portland Site*, which was prepared by Golder Associates (Golder) for StarLink Logistics Inc. (StarLink). Thank you for your response.

DEQ received the *Outfall 22B IRAM Performance Monitoring Second Quarter 2015 Report* on September 22, 2015, documenting the 2015 second quarter results of water discharge sampling and analysis from the Outfall 22B system, and subsequently issued review comments in our October 8, 2015 letter to StarLink.

DEQ has determined that StarLink's response does not adequately address the comments provided in our October 8, 2015 letter. Therefore, DEQ is now directing StarLink to address our comments presented below.

DEQ Specific Comment No.1

Page 6, 4.2 Field Parameter Results. The report identifies the NL-Gould Superfund Site remedy as the likely source of elevated pH in groundwater along the edge of the ESCO property due to weathering of foundry sand material and the neutralization of battery acid that likely occurred as part of battery waste stabilization efforts on their site. DEQ notes that several remedial actions were conducted to neutralize herbicide production waste in former Doane Lake and West Doane Lake. As presented in the *RI/SCE Report Addendum*¹ Appendix B-Table Showing Status of Certain Actions Related to Former Rhone-Poulenc Operations, lime was added to former Doane Lake in 1965 to increase pH to between 8 and 9 in order to treat odor issues associated with herbicide production waste. In 1980, the Lake Area Drainage Ditch was treated with lime, and West Doane Lake was also treated with lime between 1980 and 1987. Please include this information and provide additional detail if available to document other potential sources and causes related to elevated pH in the vicinity of former Doane Lake sediments in future applicable submittals to DEQ.

¹ (DEQ 2014) *Rhone-Poulenc Remedial Investigation Report: Addendum-RI/SCE (November 19, 2010)*. Prepared by Oregon Department of Environmental Quality. April 2015.

StarLink's November 6, 2015 Response: *The lime treatment of Doane Lake occurred for limited periods. The lime treatment was not considered a source of the pH encounter near the 22B sewer line because of its limited use and lack of similar pH levels in shallow groundwater in the area where lime was applied and it is outside the area near the 22B sewer line. Disposal of significant quantities of lime waste by other parties occurred in the northern portion of the Schnitzer property and much of this disposal occurred in former Doane Lake and East Doane Lake. High pH groundwater was described in the RI that was associated with areas near ESCO, NL-Gould, Air Liquide and Arkema (RI/SCE Section 8.3 (AMEC 2010¹)). Therefore, ESCO, NL-Gould, and Schnitzer are the likely sources for elevated pH detected in non-stormwater flow at 22B and the 22B manholes due to their geographic proximity to the portion of 22B where elevated pH was detected.*

DEQ Response: DEQ does not concur with StarLink's assessment that the former Rhone-Poulenc site is not a potential source of elevated pH detected in non-stormwater flow at 22B and the 22B manholes. As previously noted, lime was added to former Doane Lake in 1965 to increase pH in order to treat odor issues associated with herbicide production waste. Correspondence documenting this action are included as an attachment to this letter and indicate that the bank areas around the lake were treated. Please include this information and provide additional detail if available in future applicable submittals to DEQ.

DEQ Specific Comment No 3

Table 5: Outfall 22B 2nd Quarter 2015 IRAM Performance Monitoring-Detected Results Summary. The data validation report does not provide rationale for reporting estimated maximum possible concentration (EMPC) results as "U" (The constituent was analyzed for, but was not detected above the reported sample quantitation limit). As previously discussed with StarLink, DEQ generally follows EPA guidance regarding the use of qualified data in risk assessments. The most commonly encountered data qualifier is J, indicating an estimated value. J-qualified data are considered the same as unqualified data for risk assessment purposes. Similarly, EMPC qualified data are also considered the same as unqualified data for risk assessment purposes.

Please revise the report to include updated summary tables that appropriately indicate EMPC detections. DEQ also requests that StarLink confirm in an e-mail or other written response that EMPC values were included in all site risk assessments, and are also presented correctly in the RI/SCE Report. Please clearly indicate if the value presented as valid sampling data is an EMPC detected value in future submittals to DEQ.

StarLink's November 6, 2015 Response: *EPA guidance for laboratory reporting was followed in the report. The results that DEQ referred to were presented as reported by the laboratory (Vista Analytical Laboratory, El Dorado Hills, California). The laboratory routinely reports PCDD/F, OCI and PCB congener results with EMPC values but either as non-detect (ND) or as detected (results with or without EMPC values). No changes were made to the EMPC reported results during validation and results were reported as received from the laboratory. Table 5 is a summary of "detected" parameters; therefore listing laboratory results reported as ND in Table 5 is not appropriate. Laboratory results with EMPC non-detect values and EMPC detected values were reported in Table 6. Similarly, in the RI-SCE and risk assessment reports EMPC non-detect values were treated as non-detects, EMPC detected values were treated as detects.*

DEQ Response: DEQ contacted Vista Analytical to confirm Golder's understanding regarding how Vista Analytical reports EMCP results. Based on our conversation with Vista and subsequent conversation with Kent Anglos (Golder), it is DEQ's understanding that Vista Analytical does not in fact report EMPC values as either non-detect or as detected for specific dioxin/furan congeners, PCB congeners or organochlorine insecticides. Rather, Vista Analytical chooses to always report these EMPC values as non-detect. Other laboratories choose to report EMPC as detected values with an EMPC flag. DEQ guidance clearly states that EMPC results are considered the same as unqualified data for risk assessment purposes, and therefore must be reported as such.

A revised report which includes updated summary tables that appropriately notes EMPC results must be submitted to DEQ within 30 days. Also, future submittals to DEQ must clearly indicate EMPC values and evaluate data consistent with DEQ guidance.

Based on Golder's statements regarding previous submittals, it appears that StarLink may have submitted reports inconsistent with DEQ EMPC guidance. To address this issue, summary tables of all groundwater data with EMPC results that were incorrectly identified as "non-detects" must be presented within 30 days so that DEQ can assess the potential impacts to the evaluation of groundwater transport of contaminants to the river. Further discussions may be necessary to determine whether or not additional evaluation of the groundwater data is needed and if additional reporting of soil/sediment data will be required.

DEQ appreciates the continued progress to monitor the performance of the 22B IRAM. Please feel free to contact me at 503 229-6748 if you have any questions.

Sincerely,



Scott Manzano, Project Manager
DEQ NWR Cleanup Program

C: *Joan Underwood, Quantum Management Group*
Jim Benedict, Cable, Huston, Benedict, Haagensen & Lloyd
Kent Angelos, Golder Associates
Eva DeMaria, EPA (electronic only)
ECSI #155

Attachments: Correspondence of Doan Lake Sediment Lime Treatment

CHIPMAN CHEMICAL COMPANY, INC.

P.O. BOX 1065, BURLINGAME, CALIFORNIA 94011

August 25, 1965

Please Address Reply
Chipman Chemical Co., Inc.
6200 N.W. St. Helen's Road
Portland, Oregon 97210

Mr. H. M. Patterson, Chief
Air Quality Control
Oregon State Sanitary Authority
P. O. Box 231
Portland, Oregon 97207

Dear Mr. Patterson:

In reply to your letter of June 15, 1965, we wish to discuss the progress that we have made during the operating year 1964-1965 to further improve our plant to minimize the release of odorous chemicals.

As agreed at the State Sanitary Authority meeting on June 24, we have treated Doane Lake with calcium hydroxide to raise the pH from the acid condition that existed to a basic condition. This basic condition has reduced the release of odorous chemicals from the surface of the Lake measurably. Our air monitoring tests show a better than 90% reduction in the release of odors from this area. In addition, we are treating our effluents at the present time to raise the pH to a level that renders any odorous chemicals non-volatile.

Since our water effluent program is going to eliminate objectionable chemicals from our effluent so that there will not be a fish problem, the specific problem of odors from our effluents will be solved.

Specific reference was made in your letter to the non-effectiveness of our masking program. We have contacted the Reodorant Engineering Company for advice on redesign to give effective coverage. They have indicated that this type of system has proven to be effective in other major organic chemical plants and have given us engineering information for revision of this installation. Revision will be complete by August 27 so that this system should be effective.



August 25, 1965

In addition to these specific programs, we have made revisions as follows in our plant operation this past year:

1. Installed an improved vent scrubber on the Hydrochloric acid system to improve the odor control efficiency.
2. Installed an improved demister in the 2,4-D odor control system to eliminate any release of organics into air.
3. Installed a formulation overflow system to eliminate any possible release of bulk quantities of organics to Doane Lake.
4. Purchased two more totally enclosed pumps for phenol service to eliminate pump packing leakage.
5. Purchased a replacement ester kettle of special alloy to eliminate any possible leakage of ester.

The improved maintenance program that we have followed this past season has given us our most trouble-free shut down period maintenance repair-wise. After a thorough inspection of our plants, we have required less repair work on our equipment than in any previous down period. We will continue to improve our running maintenance program to eliminate the emergencies that potentially create odor release problems.

We will intensify our inspection programs in the various plants to eliminate leakage and operational upsets. These inspections will follow the forms that we have followed in the past.

The philosophy of elimination of individual odor release sources will be continued and as individual problem areas arise corrective steps are going to be taken. An example of this is the in-line sampling system that we have on our phenol chlorinators. We have found this to be most effective to stop odor release and intend to install similar systems on the various process streams that potentially contribute to odor or chemical release.

We recognize that occasional odor release complaints to both the State Sanitary Authority and to ourselves have been made.

Mr. H. M. Patterson

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August 15, 1965

However, we have noted a continuing reduction in the number of these odor complaints year by year and are working towards a plant operation that will be completely free of problems that contribute to odor complaints. We intend to be a good neighbor in the community.

Very truly yours,


R. F. Gitschlag
Production Manager
Western Region

RFG:dm

cc: K. M. Spies, Secretary & Chief Engineer
E. J. Weathersbee, Deputy State Sanitary Engineer
R. Ott, Quality Control Engineer
R. E. Hatchard, Air Quality Control, City of Portland
B. J. Smith, Vice President & General Manager
T. B. Henshaw, District Engineer

Meeting - Chipman Chemical Company

September 14, 1965

Those in attendance: Messrs. Smith, Ruggles, Gitchlog, Henshaw, K. H. Spies,
H. M. Patterson, B. M. Johnson, E. J. Weathersbee

Proposal

1. Construct new MCPA (new process) plant by February 1
2. Pump out and flush out Doane Lake
3. Retain Dr. Charlton to consult on bacterial degradation of phenols in Doane Lake.
4. Contract with Dr. Warren, D.S.M. for bioassays regarding fish tastes.
5. Adjust pH in (7.5-11) Doane Lake and continuous pH adjustment of effluent station (facility in within 30 days).
6. March 1 delivery date for contractor to ensure against releases (spills) from 2-4-D plant. Will submit specific proposal for changes in 2-4-D plant.

Mr. R. F. Gitchlog will send letter commenting in detail on the above items. We will then respond giving conditions of approval as required.

Doane Lake

36 MG 700 GPM = 1 MGD = 35 days

350 GPM = $\frac{1}{2}$ MGD = 70 days

Estimate 300 GPM coming into lake. Propose pumping out rate of at least 1,000 GPM

Office Memorandum •

OREGON STATE BOARD OF HEALTH

To : H. M. Patterson

Date: October 20, 1965

From : C. A. Ayer *C.A.*

Subject: AP-7 Portland - Chipman Chemical Company

On Tuesday, October 19, 1965, I visited the Chipman Chemical plant. The purpose of my visit was to become acquainted with their processes. After a brief orientation by Mr. Gitschlag, I was shown around the plant by Mr. Norman Hansen, Production Supervisor.

There were definite phenolic odors throughout the plant area. Although chlorine is used both as a raw material and as a bleach, there were no chlorine odors. The few visible places where vapor was visibly escaping were steam heat relief valves. There is some blending done, both of products made at the plant and of products bought outside. These operations do not contribute significantly to the odor problem. The MCPA plant was being torn down, in preparation for a rebuilding that will incorporate an entirely new process. Doane Lake and the slough leading to it have been thoroughly limed. The most noticeable odor there was from a perfuming apparatus used to mask DCP and phenol odors.

After determining that the equipment is tight and well ducted, one question remains, to wit: What is the source of the odors? One possibility is diffusion through fittings and seals.

/ms

Addition to above memo. - October 22, 1965.

Note → I called R. F. Gitschlag about MCPA production. Maintenance on the existing facilities will be completed on Tuesday and Wednesday, October 26 and 27. Production of MCPA will commence then. The projected MCPA plant has been delayed pending further research on a stripping solvent to be used in their process. (The solvent previously decided on was vetoed by company headquarters.) Mr. Gitschlag did not indicate how long this would take. He will send a letter on their plans for MCPA production and the status of the new process.

✓ cc W.Q.C.

CHIPMAN CHEMICAL COMPANY, INC.

P. O. BOX 1065, BURLINGAME, CALIFORNIA 94011

November 10, 1965

KHS
Please Address Reply
Chipman Chemical Co., Inc.
6200 N. W. St. Helen's Road
Portland, Oregon 97210

Mr. Kenneth H. Spies
Oregon State Sanitary Authority
P. O. Box 231
Portland, Oregon 97207

Division of
Sanitation & Engineering
Oregon State Board of Health

R E C E I V E D

NOV 12 1965

Dear Mr. Spies:

DNF	TEMP	PERM
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In reply to Mr. Weathersbee's letter of October 26, I wish to confirm the information that was given to your staff at a meeting held on September 14, 1965. The following program is being pursued to correct our water effluent problem and meet the March 1, 1966 deadline date to eliminate the possibility of a fish taste problem during the Spring of 1966.

I. MCPA PLANT CONSTRUCTION

A description of our proposed new process in the MCPA Plant and flow diagrams for this process were presented at the meeting held on September 14. We have submitted details of this to the City and obtained a building permit for the construction of this plant. We have had discussions with Mr. Hatchard of the Air Quality Control Division of the City of Portland on various aspects of this plant.

Subsequently, Mr. Ruggles has visited our parent organization's laboratories in Europe and they have reviewed our process. They have suggested several changes in the process that makes major reductions in the amount of water effluent from this plant. Because of these major changes, we felt it advisable to restudy the MCPA process to determine if the suggested revisions can be utilized to improve our effluent stream. This study is proceeding satisfactorily in our laboratory and we will be reporting on it shortly.

Because of this study, we are forced to delay the dismantling of the existing MCPA Plant and have restarted the MCPA Plant to make our spring requirements of MCPA acid. We expect to have the MCPA Plant shut down prior to March 1, 1966. With the pumping of Doane Lake, we feel this operation will not contribute to the fish taste problem.



Mr. Kenneth H. Spies

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November 10, 1965

The construction of a new MCPA Plant has been indefinitely delayed, at least until such time as we have completed further study of suggested methods to improve the water effluent of this unit.

II. FLUSHING OF DOANE LAKE

Engineering has been completed to flush Doane Lake during periods of high water of the Willamette River. Plans and a description of this system are included for your review. Mr. T. B. Henshaw and I had an informal meeting with Mr. Bryan Johnson to discuss this installation and at Mr. Johnson's suggestion we have installed a diffuser on the pump out line of Doane Lake to give us a concentration at the point of discharge of less than 1%.

We have run toxicity tests on the Lake water and find that the Lake water is not toxic to fish at 1% and 10% concentrations for periods of exposure of fifteen minutes and one hour. A letter was written to Mr. Bryan Johnson detailing results of this test on October 22.

As indicated by you, high water for the Willamette River normally occurs at the end of November and we anticipate starting this flushing operation at the rate of 1,000 gallons per minute maximum as soon as the Willamette River gauge at Salem reaches 20,000 second feet. We will advise regularly with your Authority on this operation and will maintain complete data on this operation. Samples will be taken daily of the material being pumped to the River and organics will be run on it and reported to you on the weekly water report. A sample data sheet is attached. We anticipate that this operation will be completed prior to February 1, 1966.

III. OUTSIDE LABORATORY ASSISTANCE

Dr. Charlton of Charlton Laboratories has been consulted for information on the bio-degradation capability in Doane Lake. We have had several meetings with Dr. Charlton and because of the sodium chloride levels of our effluent and of the Lake, he feels that there is little hope of establishing and maintaining bacteria in this pond. At the present time, we have tabled any further consideration on this aspect of our water pollution problem.

IV. FISH TASTE TESTS

We have contracted with Dr. Warren of the Department of Fisheries and Wildlife at Oregon State University to determine

Mr. Kenneth H. Spies

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November 10, 1965

the fish taste characteristics of our various effluents. A report of October 12, 1965 by Dean L. Shumway is attached. There will be further reports by Dr. Warren's group. The data will be available in detail for your review.

The work that Dr. Warren's group has done on our various effluents has indicated that dichlorophenol potentially is a major contributor to fish taste. It appears that our other effluents and other components of our effluents do not contribute to fish taste as much as does dichlorophenol.

We have worked in the past under the assumption that ortho dichloro benzene potentially was a strong contributor to fish taste. This does not appear to be the case at the present time. This has somewhat changed our emphasis on our future clean up system.

VI. DOANE LAKE TREATMENT

As reported in our letter to Mr. Patterson, treatment of Doane Lake with lime was completed the week ending September 10, 1965. At that time the pH of the Lake was between 8 and 9. We did additional treatment of the bank areas around the lagoon and on the plant site. A weekly check of the pH has been made since that time and the pH has stabilized at approximately 8. Several maps showing the pH by area are attached.

At the present time, we are using sodium hydroxide in our effluents from both the MCPA and 2,4-D Plants to give us a pH of 11 or 12. We have engineered a system for utilizing slaked lime on a continuous basis to treat our effluent to give us a pH of 8 to 9. This system will include pH measurement, flow measurement, and automatic sampling. A flow diagram of this installation showing the location is attached.

VI. 2,4-D PLANT REVISIONS

The proposed installation for treatment of the 2,4-D Plant effluents was planned concurrently with the MCPA Plant revisions. The heart of this installation was a rotating disc contact tower to be supplied by the Mixing Equipment Company. We received a quotation from these people with a delivery date later than March 1, 1966. Because of the unavailability of this equipment and the complicating factor that dichlorophenol may be the major contributor to fish taste, we are re-evaluating our treatment process in the 2,4-D Plant. We will submit a revised 2,4-D program within the next sixty days (before the first of the year).

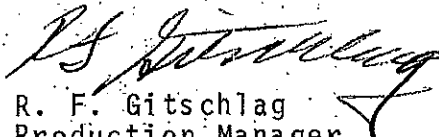
Mr. Kenneth H. Spies

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November 10, 1965

One of the suggestions that was made by our parent organization was a different method for removing unreacted Cresol from our condensation mixtures in the MCPA Plant. We are currently investigating and will pilot operate a plant size extraction system for removing unreacted Cresol from our MCPA condensation mixture. It appears that this technique could be utilized in our 2,4-D Plant and would make a major change in the water balance of the plant. We are investigating the possibilities of plant pilot operating this process step.

Very truly yours,


R. F. Gitschlag
Production Manager
Western Region

RFG:dm

cc: H. M. Patterson
E. J. Weathersbee
B. M. Johnson
R. Woods
R. E. Hatchard
B. J. Smith
T. B. Henshaw
J. G. Ruggles

MEMORANDUM

To: Members of the State Sanitary Authority
From: Water Quality Control Staff
Date: August 26, 1935
Subject: Status Report—Salmon Tainting Problem and Doane Lake

For the past several years, the Sanitary Authority has received occasional complaints during the spring chinook salmon fishing season regarding tainted fish caught in Multnomah Channel. During this past spring, the number of complaints received increased to a very substantial number.

Between March 16 and April 21, a total of 129 complaints were received and recorded by the Fish Commission, Game Commission, and Sanitary Authority. These complaints listed 166 tainted salmon caught in the Willamette River and Multnomah Channel between Swan Island and St. Helens, and 15 tainted salmon caught in the adjacent water of the Columbia River for a total of 181 tainted fish.

One of the potential sources of taste-causing substances investigated, and still being investigated, was the effluent from Doane Lake.

Twenty gallons of Doane Lake water were collected and taken to Oregon State University for bioassay analysis. Eight- to ten-inch rainbow trout, provided by the Game Commission, were used as the test fish. The first results indicated that the water from Doane Lake would produce an off-taste in the test trout similar to that observed in the salmon in from one to eight days' exposure time in dilutions as small as 0.0001% or 1 part per million.

A second test on the same water sample produced similar results after two days' exposure. Since the one part per million dilution was the weakest solution tested, the dilution required before the lake water would not produce an undesirable taste in the trout was not determined.

From data available, it may be estimated that the average flow from the lake to the river during the fish tainting problem period was approximately 0.5 cfs.

Flow in the Willamette River during the April-May period varied between 10,000 and 20,000 cfs.

Dilutions available in the river water may then be estimated at not greater than 40,000 to one, or much more concentrated than the bioassay dilutions of 1,000,000 to one.

At the Sanitary Authority meeting held on June 24, 1965, it was reported that the Chipman Chemical Company had proposed to add lime to the waters of Doane Lake to increase the pH. The purpose of this was to reduce the objectionable odors coming from the lake.

What effect this treatment may have on the lake water in regard to its potential for creating off-flavors in fish has not yet been determined. The latest information indicates that the lake treatment is better than ^{90%} 80% completed. When the treatment is completed, a similar bioassay and taste test will be conducted on the treated lake water to determine what further steps will need to be taken.

The Chipman Chemical Company has been in contact with Dr. Warren, Associate Professor of Fisheries at Oregon State University, regarding a more complete program to study the relationships between the plant's liquid effluents and the off-flavors produced in fish.

A meeting has been scheduled for Monday, August 30, between the staff members of the Game Commission, Fish Commission, Chipman Chemical Company, and Sanitary Authority at Dr. Warren's office to discuss the details of the program further. Dr. Warren estimated that the study may take between three months and one year to complete, depending upon the initial results.

Another test, using the effluent from the McCormick and Baxter Creosoting Company, was conducted. Preliminary results indicate that this effluent produced only a slight off-flavor in a 1% concentration, or 10,000 parts per million, and no off-flavor in a 0.1% concentration, or 1,000 parts per million.

In a letter dated December 12, 1963, Chipman Chemical Company stated that all equipment necessary to abate water pollution in the Willamette River would be completed and ready for operation by November 1, 1965.

Although the initial concern regarding the waste effluents being discharged to the river by Chipman Chemical Company was its toxicity to fish life, it now appears that the problem of tainting fish is of primary concern.

It is entirely possible for the company to construct facilities that will produce a non-toxic plant effluent but will still produce an off-flavor in fish. A revised schedule that would establish a date at which time the water seeping from the lake and the effluent from plant would not produce an off-flavor in fish seems to be required.

In order to prevent the recurrence of the problem of tainted chinook salmon in Multnomah Channel, it is recommended that March 1, 1966, be established as the deadline at which time the effluent discharge from the plant and from Doane Lake will not produce an off-flavor in the spring salmon.